



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,954	02/16/2001	Tuomas Niemela	NC22031	4197

26352 7590 07/19/2004

THOMAS B. HAYES
NOKIA INC.
6000 CONNECTION DRIVE
MD 1-4-755
IRVING, TX 75039

EXAMINER

MEW, KEVIN D

ART UNIT	PAPER NUMBER
----------	--------------

2664

5

DATE MAILED: 07/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/784,954

Applicant(s)

NIEMELA ET AL.

Examiner

Kevin Mew

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-23 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-13 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/16/2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Drawings

1. This application, filed under former 37 CFR 1.60, lacks formal drawings. The informal drawings filed in this application are acceptable for examination purposes. When the application is allowed, applicant will be required to submit new formal drawings. In unusual circumstances, the formal drawings from the abandoned parent application may be transferred by the grant of a petition under 37 CFR 1.182.

Claim Objections

2. Claims 6, 10, 17, 18, 21 are objected to because of the following informalities:

In claim 6, the term "comprise" in line 2 of the claim is missing an "s" and should be read as "comprises" instead.

In claim 10, a semicolon is missing at the end of line 3 of the claim.

In claim 17, the term "comprises" in line 2 of the claim should delete the "s" to make it read as "comprise" instead.

In claim 18, the term "removes" in line 2 of the claim should delete the "s" to make it read as "remove" instead.

In claim 21, the term "comprises" in line 2 of the claim should delete the "s" to make it read as "comprise" instead.

Appropriate corrections are required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claim 1** is rejected under 35 U.S.C. 102(e) as being anticipated by Balazinski et al. (USP 6,711,143).

Regarding claim 1, Balazinski discloses a method of communicating data between a Base Station System (BSS) and a Serving GPRS Support Node (SGSN) **(a system for interfacing an SGSN with a BSS utilizing a Gb-over-IP interface, see lines 52-54, col. 2)**, the method of communicating comprising the steps of:

providing protocol data and associated functions **(protocol stacks in the BSS and SGSN utilized the IP-based Gb interface)**, including encapsulating a data packet with a User Datagram Protocol (UDP) and a Internet Protocol (IP) **(protocol stack comprising UDP layer and IP layer, see lines 1-6, col. 5 and Fig. 3)**, wherein the UDP comprises a UDP port associated with a Network Service Virtual Connection (NS-VC) **(single UDP port carries NSEI and hence is associated with the NSE and the NS-VC, see lines 57-63, col. 4 and lines 47-48, col. 5)** and, the IP provides an IP address associated with a Network Service Entity (NSE) **(SGSN keeps a relationship between NSEIs and IP addresses internally, see lines 43-45, col. 7)**; and transmitting the data packet provided with the protocol data **(data packets are transmitted between the BSS and SGSN over**

Art Unit: 2664

a connectionless IP network and the data packets carry information between functional entities in the SGSN and functional entities in the BSS, see lines 22-25, col. 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 2, 5-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Balazinski in view of the admitted prior art, Forslow (WO 99/16266).

Regarding claim 2, Balazinski discloses all the aspects of the claimed invention set forth in the rejection of claim 1 above, except fails to explicitly show the method of communicating as recited in claim 1, wherein the UDP port is identified as either for real-time or non-real time services.

However, Forslow discloses UDP protocol is paired up with RTP (Real-Time) protocol for providing real-time services (see Fig. 7). Furthermore, UDP is a connectionless protocol with no guarantee delivery of services, which makes it suitable for providing non real-time services.

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the protocol stack of Balazinski with that of Forslow such that the single UDP port of Balazinski will pair up with RTP protocol of Forslow so that it will support both real-time and non real-time services such as the RTP/UDP

Art Unit: 2664

protocol taught by Forslow. The motivation to do so is to support multimedia services such as real-time video and audio services and non real-time applications such as file transfer because a circuit-switched bearer will be allocated if the a real-time service and a packet-switched bearer will be allocated for a non-real time service.

Regarding claim 5, Balazinski discloses all the aspects of the claimed invention set forth in the rejection of claim 1 above, except fails to explicitly show the method of communicating data as recited in claim 1, wherein the data packet comprises a Sub-network Dependent Convergence Protocol (SND CP).

However, Forslow discloses a method of communications between the mobile station and the SGSN in which the SGSN comprises a SND CP layer on top of the LLC layer in the protocol stack as shown in Fig. 3.

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to combine the protocol stack of Balazinski with the protocol stack of Forslow such that the protocol stack of Balazinski will comprise a SND CP layer lying on top of the LLC layer such as the SND CP layer taught by Forslow. The motivation to do so is to use SND CP to map network level protocol characteristics onto the underlying LLC and provides functionalities like multiplexing of network layer messages onto a single virtual logical connection, ciphering, segmentation, and compression.

Regarding claim 6, Balazinski and Forslow disclose all the aspects of the claimed

Art Unit: 2664

invention set forth in the rejection of claim 5 above. Balazinski further discloses the method of communicating data as recited in claim 5, wherein the data packet further comprise a Logical Link Control (LLC) (LLC, see lines 1-14, col. 5 and element 18, Fig. 3).

Regarding claim 7, Balazinski discloses the method of communicating data as recited in claim 6, wherein the protocol data and associated functions further comprise:

- a Base Station System GPRS Protocol (BSSGP) (**BSSGP**, see lines 1-14, col. 5 and element 17, Fig. 3);

- a network service control (**Network Service Control**, see lines 1-14, col. 5 and element 40, Fig. 3);

- a data link layer (**a link (L2) layer**, see lines 1-14, col. 5 and element 36, Fig. 3);

and

- a physical link layer (**a physical (L1) layer**, see lines 1-14, col. 5 and element 35, Fig. 3).

Regarding claim 8, Balazinski discloses the method of communicating data as recited in claim 7 further comprising the step of receiving the data packet provided with the protocol data (see lines 22-25, 55-61, col. 2).

Regarding claim 9, Balazinski discloses the method of communicating data as recited in claim 8 further comprising the step of removing the protocol data and associated functions and the LLC and the SNDCP.

Regarding claim 10, Balazinski discloses all the aspects of the claimed invention set forth in the rejection of claim 1 above. Balazinski further discloses the method of communicating data as recited in claim 1, wherein the protocol data and associated functions further comprise:

- a Logical Link Control (LLC) (**LLC**, see lines 1-14, col. 5 and element 18, Fig. 3);

- a Base Station System GPRS Protocol (BSSGP) (**BSSGP**, see lines 1-14, col. 5 and element 17, Fig. 3);

- a network service control (**Network Service Control**, see lines 1-14, col. 5 and element 40, Fig. 3);

- a data link layer (a **link (L2) layer**, see lines 1-14, col. 5 and element 36, Fig. 3);

and

- a physical link layer (a **physical (L1) layer**, see lines 1-14, col. 5 and element 35, Fig. 3).

Balazinski does not explicitly show the method of communicating data as recited in claim 1, wherein the protocol data and associated functions further comprise:

- a Sub-network Dependent Convergence Protocol (SND CP)

However, Forslow discloses a method of communications between the mobile station and the SGSN in which the SGSN comprises a SND CP layer on top of the LLC layer in the protocol stack as shown in Fig. 3.

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to combine the protocol stack of Balazinski with the protocol stack of Forslow such that the protocol stack of Balazinski will comprise a SND CP layer

Art Unit: 2664

lying on top of the LLC layer such as the SNDCP layer taught by Forslow. The motivation to do so is to use SNDCP to map network level protocol characteristics onto the underlying LLC and provides functionalities like multiplexing of network layer messages onto a single virtual logical connection, ciphering, segmentation, and compression.

Regarding claim 11, Balazinski and Forslow disclose all the aspects of the claimed invention set forth in the rejection of claim 10 above. Balazinski further discloses the method of communicating data as recited in claim 10, wherein the SNDCP provides header compression and stripping for the lower layers such as IP (see lines 15-18, page 21).

Regarding claim 12, Balazinski and Forslow disclose all the aspects of the claimed invention set forth in the rejection of claim 10 above. Balazinski further discloses the method of communicating data as recited in claim 10 further comprising the step of receiving the data packet provided with the protocol data (see lines 22-25, 55-61, col. 2).

Regarding claim 13, Balazinski and Forslow disclose all the aspects of the claimed invention set forth in the rejection of claim 10 above. Balazinski further discloses the method of communicating data as recited in claim 12 further comprising the step of:

removing the physical link layer, the data link layer, the IP, the UDP, the network service control and the BSSGP (it is inherent that the de-encapsulation process using the protocol stack of Balazinski upon receiving the data packet would involve removing the header information of each underlying layer in the protocol stack as the data packet propagates up the protocol stack. it is also noted that the protocol stack of SGSN comprises layers in the ascending order of a L1 physical layer, a L2 link layer, an IP layer, an UDP layer, an network service control and a BSSGP).

5. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Balazinski in view of Lager et al. (USP 6,636,502).

Regarding claim 3, Balazinski discloses all the aspects of the claimed invention set forth in the rejection of claim 1 above, except fails to explicitly show the method of communicating as recited in claim 1, wherein the data packet is associated with a Temporary Logical Link Identifier (TLLI) and a Network Service Access Point Identifier (NSAPI).

However, Lager discloses that mobile station sends an activate Packet Data Packet (PDP) context request message, which comprises TLLI and NSAPI, to the SGSN, and the SGSN returns an Activate PDP Context Accept message, which comprises TLLI and NSAPI, to the mobile station (see lines 66-67, col. 6 and lines 32-35, col. 7).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the protocol stack of Balazinski with that of Lager such that data packet of the protocol stack of Balazinski would be associated with TLLI and NSAPI such as the TLLI and NSAPI in the PDP context taught by Lager. The

motivation to do so is to for the mobile station to use the TLLI to identify itself to the SGSN and to select a dynamic PDP address by selecting a NSAPI.

Allowable Subject Matter

6. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. Claims 14-23 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

In claim 4, the method of communicating as recited in claim 3 further comprising the step of:

providing a Link Select Parameter (LSP), the BVCI, NSEI and LSP associated with the TLLI and NSAPI, the LSP identifying a Network Service Virtual Link (NS-VL) associated with the NS-VC.

In claim 14, a system for communicating data between a mobile communications architecture and a GPRS architecture, the system comprising:

a Serving GPRS Support Node (SGSN) coupled to the BSS, the SGSN having a second BVC, the SGSN having a second at least one NS-VC associated with the second BVC, wherein the BSS transmits data between the first BVC and the second BVC over the first at least one NS-VC.

In claim 19, a system for communicating data between a mobile communications architecture and a GPRS architecture, the system comprising:

a Serving GPRS Support Node (SGSN) coupled to the BSS, the SGSN having a second BVC, the SGSN having a second at least one NS-VC associated with the second BVC, wherein the SGSN transmits data between the first BVC and the second BVC over the second at least one NS-VC.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure with respect to method and system for communicating data between a mobile communications architecture and a packet switched architecture.

US Patent 6,317,421 to Wilhelmsson et al.

US Patent 6,104,929 to Josse et al.

US Patent 6,081,723 to Mademann


US Patent 5,729,537 to Billstrom

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 703-305-5300.

The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

KDM
Art Unit 2664